

NOAA'S National Weather Service Forecast Office
Louisville, Kentucky

Winter Weather Awareness Week
November 13th - 17th 2006

The National Weather Service would like to use this week to remind people about the dangers of hazardous winter weather and extreme cold. We would like to urge people to prepare and be ready ***before*** a winter storm or cold wave hits.

This article will cover a variety of topics, including

- NWS Winter Weather Products
- Wind Chill Index
- Frostbite / Hypothermia
- Winter Weather Preparedness
- Kentucky Weather Information and photos



NWS Winter Weather Products

Hazardous Weather Outlook (HWO)

The Hazardous Weather Outlook includes any potential weather hazard out to seven (7) days. It is used for planning purposes and will include a short description of what the weather threat is, when it is expected, and how much it may impact the region. The HWO is issued daily around 4:30 AM, 11:30 AM and 4:30 PM...and is updated during the day as needed. It is also broadcast on NOAA Weather Radio.

Winter Storm Watch (WSW)

A Winter Storm Watch is issued when there is a potential for a winter storm to affect the region during the next 1 to 2 days. It does not always mean the area will be hit by a winter storm, but there is still some uncertainty of the exact path or timing of the event. This is a planning stage. Use this time to ensure you have supplies at home, like some extra food, medications, baby items, etc... If travel is

planned, check ahead and see if a different route or delaying your departure may make your trip safer. Be alert for changing weather conditions.

Winter Weather Advisory (WSW)

Advisories are issued for those winter weather events that are expected to be more of an inconvenience and should not become life-threatening if caution is exercised. These are often issued for 1 to 4 inches of snow, or an accumulating combination of freezing rain, sleet and snow. It may be issued for less snow for early season events, when drivers may not be accustomed to slick roads.

Winter Storm Warning (WSW)

Winter Storm Warnings are usually issued when dangerous winter weather is expected, occurring, or imminent. The weather can become life-threatening. Criteria includes snowfalls of 4 inches or more in 12 hours, 6 inches in 24 hours, or lower amounts if snow will be accompanied by strong winds or by substantial amounts of sleet or freezing rain. Avoid unnecessary travel.

Blizzard Warning (WSW)

The most dangerous winter event is certainly the blizzard. Blizzard Warnings are issued when snow or blowing snow lowers visibilities to a 1/4 mile or less, wind gusts hit 35 mph or higher, and the storm lasts for 3 hours or more. Travel is dangerous and should be avoided.

Ice Storm Warning (WSW)

Ice storm Warnings are issued when freezing rain will cause widespread glazing. A coating of ice is expected to reach 1/4 inch thick or more on objects and make travel nearly impossible. For lesser amounts of ice, usually a winter weather advisory would be used, but even a thin glaze of ice can make travel difficult. Avoid travel.

Wind Chill Warning (NPW)

Issued when wind chills of -25 F or lower are expected with wind speeds of 10 mph or more. A wind chill advisory is issued for values between -10 and -24 F. Dress warmly and cover as much exposed skin as possible.



Wind Chill Index

The "Wind Chill" Index is a calculation of how cold it feels outside when the effects of temperature and wind speed are combined. The Louisville National Weather Service issues Wind Chill Advisories when wind speeds average 10 mph or higher...and the index reaches -10 F. Wind Chill Warnings occur when indices drop to -25 F or lower. Exposure to cold, biting air for long periods of time is dangerous.



Wind Chill Chart



		Temperature (°F)																		
		Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Wind (mph)	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93	
	50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95	
	55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97	
	60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98	

Frostbite Times

30 minutes

10 minutes

5 minutes

Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

In late 2001 the NWS started using a new wind chill index. This new index was designed to calculate a more accurate reading of how the cold air feels on human skin. It was based on wind speeds at human face level, an updated heat transfer theory which factors in heat loss from the body to its surroundings during cold windy days, and a consistent standard for skin tissue resistance. The main goal of the change was to use modern science in revising the index so that it more accurately represents the impact on humans.

Frostbite / Hypothermia



Watch for signs of frostbite or hypothermia when outdoors during extreme cold weather.

Frostbite is a severe reaction to cold exposure that can permanently damage its victims. A loss of feeling and a white or pale appearance in fingers, toes, or nose and ear lobes are symptoms of frostbite. In fact, research (P.Tikuisis, 2004) has shown that uncovered fingers can freeze up to 8 times faster than a human cheek, and the nose can freeze 3 times faster. This illustrates the importance of keeping fingers and parts of your face (ear lobes, nose) well covered in extreme cold weather.

Hypothermia is a condition brought on when the body temperature drops to less than 95 deg F. Symptoms of hypothermia include uncontrollable shivering, slow speech, memory lapses, frequent stumbling, drowsiness, and exhaustion.

If frostbite or hypothermia is suspected, begin warming the person slowly and seek immediate medical assistance. Warm the person's trunk first. Use your own body heat to help. Arms and legs should be warmed last because stimulation of the limbs can drive cold blood toward the heart and lead to heart failure. Put the person in dry clothing and wrap their entire body in a blanket.

Never give a frostbite or hypothermia victim something with caffeine in it (like coffee or tea) or alcohol. Caffeine, a stimulant, can cause the heart to beat faster and hasten the effects the cold has on the body. Alcohol, a depressant, can slow the heart and also hasten the ill effects of cold body temperatures.

Winter Weather Preparedness

Proper winter weather awareness includes preparation. Here are some things that can help you.

When Outdoors:

- Check temperatures and wind chill indices first.
- Dress warmly, with several layers. Dress for the worst just in case.
- Use a warm coat, gloves or mittens, a hat, and water-resistant boots.
- Cover exposed skin as much as possible.
- Watch for frostbite on finger tips, ear lobes, the nose, or toes.
- Avoid over-exertion. The cold already puts a strain on the body and heart.

At Home or Work - make sure you have:

- Extra flashlights and batteries
- A battery-powered NOAA Weather Radio or AM/FM portable radio
- Extra food and water (2-3 day supply)
- Extra medicine and baby items
- First Aid supplies
- Emergency Heating source**

** If you use an emergency heating source, be alert for deadly carbon monoxide gases and never place it near another object that may catch on fire. Many house fires during the winter are caused by incorrect use of a space heater. Keep the space heater at least 36 inches away from other objects and turn it off if you leave the room.

On the farm:

- Move animals to a sheltered area.
- Supply extra food for animals.
- Have a fresh water supply (most animal deaths during the winter are from dehydration).

At School:

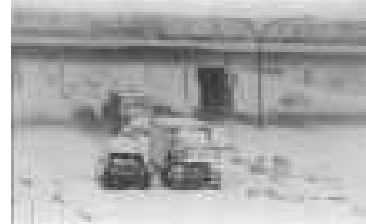
- Monitor weather conditions closely.
- Use NOAA Weather Radio to get hourly wind chill values.
- School days may need to be delayed, cancelled, or shortened.

When Traveling:

- Winterize your vehicle. Check the battery.
- Check the forecast and road conditions ahead of time.
- Consider adjusting your route to avoid poor driving conditions.
- Carry a cellular phone for use during emergencies.
- Keep the gas tank near full.
- Coordinate with others your destination and times of travel.

- Yield to snowplows. The snow cloud they produce can lower visibilities to near zero. Stay back – Stay Alive!
- Have a **survival kit** in your car:

- Extra blankets or sleeping bag
- Flashlight with extra batteries
- First Aid kit with pocket knife
- Booster cables
- A rope
- A small shovel
- A bag of sand or cat litter for traction
- Plastic bags (for sanitation)
- Extra gloves, hat, socks, waterproof matches, and candles
- Non-perishable food items and bottled water
- Road maps (for alternative routes)



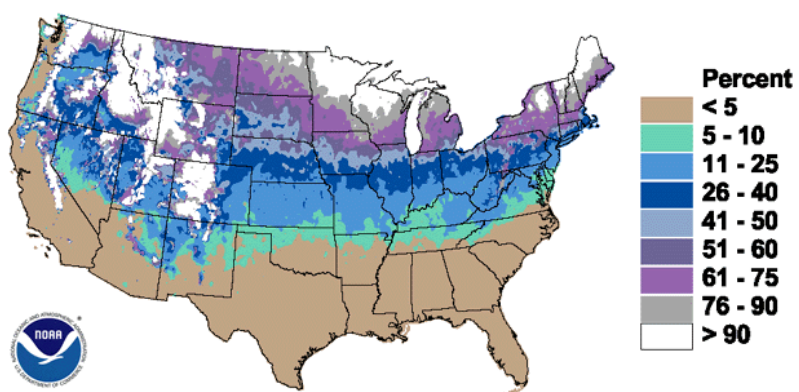
- If you do get stuck:
 - Stay with your car. Do not try to walk to safety.
 - Start the car for about 10 minutes every hour for heat.
 - Keep the exhaust pipe clear of snow.
 - Tie a bright colored (red or orange) cloth to the antenna.
 - Turn the dome light on when running the engine.
 - If you must venture away from the car, use a life-line or rope.
- Be careful of **dense fog**. Delay your travel if needed.
- Do not drive into a dense fog bank. Others may be stopped.



Local Weather information and Photos

Central Kentucky and southern Indiana averages 12 to 18 inches of snow each winter. The images below show the average winter snowfall accumulations for Kentucky...as well as the typical chances for a white Christmas.

Probability of a White Christmas



Mean Annual Snowfall

Amount in Inches

